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COVER: The official Pharmacy Week poster, reproduced in the photograph, will be distributed to pharmacists without charge through cooperating state pharmaceutical associations. This year November 4 to 10 has been designated Pharmacy Week. The colorful poster, 22 by 28 inches in size, will make a striking centerpiece for professional displays during this period.

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STRAIGHT FROM HEADQUARTERS

by ROBERT P. FISCHELIS, Secretary
AMERICAN PHARMACEUTICAL ASSOCIATION

THE gradual transition from a strenuous wartime economy to more normal living conditions will bring us face to face with certain problems that must receive the immediate attention of pharmacists and others whose living depends on the practice of pharmacy.

During the more strenuous days of planning and producing for the war emergency, the joint efforts of government and the various branches of pharmacy and the drug industry reached a high degree of efficiency. This held true for contacts with war agencies manned by men called from all walks of civilian industrial and professional life, as well as with the regular "old line" government agencies. The driving force was the will to do whatever was necessary to win the war.

Cur efforts now turn toward winning the peace, spurred by the horror of atomic weapons. There is an earnest desire everywhere to translate the gains won in blood, sweat and tears, and with the lives of men held dear, into a better functioning world where war and bloodshed may be outlawed as means of settling controversies and disputes arising among men and nations. And this highly desirable better functioning world begins right in our own communities, states, professions, trades and industries.

The problems of peace are different from those of war, but they are no less challenging. They are not temporary. They cannot be solved by constantly taking emergency measures and doing only what seems expedient at the moment.

Properly to serve mankind and to do our part in creating that better world for which this war has been fought, requires concentration on immediate as well as on long-range programs looking toward more and better medical care for everyone.

The Charter of the United Nations devotes Chapter X to the setting up of an Economic and Social Council. Article 62 provides that this Council may make or initiate studies and reports with respect to international economic, social, cultural, educational, *health* and related matters and may make recommendations with respect to any such matters to the General Assembly, to the members of the United Nations and to the specialized agencies concerned.

Broad powers are given to the Council to initiate studies and prepare reports, to call upon existing agencies for reports and counsel, to call international conferences on matters falling within its competence, and to otherwise bring health matters, among others, into the sphere of cooperation of the United Nations.

In the League of Nations, we of the United States were merely observers and unofficial participants. Under the United Nations Charter we will not only play an important part as an active participant, but we shall be expected to supply a good deal of leadership.

The quality of our international leadership will depend upon the degree of success which attends the approach to our national problems. In pharmacy, some of these immediate national problems include:

1. An adequate recruitment and training program for teachers of pharmacy.

2. Determination of the extent of need of pharmaceutical services and evolving a program of recruitment and education of men and women to meet that need.

3. Integration of our traditional system of free enterprise with an economy that seeks complete distribution of the fruits of scientific progress in the field of medical care, and particularly in the production of drugs and medicines, to all who are in need of health services.

4. Control of harmful, habit-forming and dangerous drugs to serve the best interests of the public without interference with their legitimate use.

ARE 1906 DRUG ACTS OUT-DATED?

IN a recent address Commissioner Dunbar of the Food and Drug Administration wisely called attention to the fact that nearly two-thirds of the states still have outdated food and drug laws of 1906 vintage. Only 14 states have revised their statutes to correspond with the 1938 Food, Drug and Cosmetic Act; 4 others have passed amendments which in part parallel Federal requirements. In contrast, 40 states passed legislation paralleling the 1906 Federal statute within two years of its enactment.

Although Dr. Dunbar said he was "puzzled" as to why there should be opposition to modernizing the state laws, it seems logical and without discredit to the profession that pharmacists have wanted to take a long, hard look before leaping into state legislation as far reaching as that of the Federal Food, Drug and Cosmetic Act.

At the last A. PH. A.-N. A. R. D. conference the two executive groups emphasized this point by advising "great caution" in enacting state food drug and cosmetic acts, but added "that when state legislation is proposed, every effort [should] be made to assure that the state act, in so far as it deals with adulteration and misbranding, be in strict conformity with the Federal law and regulations."

Essentially similar state and Federal statutes have the obvious advantage of simplifying both enforcement and compliance. Recognizing this, manufacturing pharmacists have usually supported modernized state legislation. We think that retail pharmacists will agree to better state laws if food and drug officials will take the trouble to consult with them and permit proper consideration *before* a complex bill is thrown into the hopper. This has not always been done. Dr. Dunbar no doubt had this in mind when he recently told state food and drug officials: "I have a profound belief that by proper approach to the pharmacists in your states you can acquire support in the passage and enforcement of adequate legislation."

It would be our guess that FDA has not been eager to attempt enforcement at the retail level, and there have been many who have questioned how far Federal jurisdiction legitimately extends. FDA seems particularly worried about the fringe of pharmacists who sell the "dangerous drugs" over the counter. Thinking pharmacists have been worried, too, for this notorious practice on the part of a few has smeared the name of pharmacy on many an occasion.

Dr. Dunbar estimated that 95% of United States pharmacies "are conducted with every consideration for the safety of the consuming public. With a clear understanding of the situation," he added, "I am confident that these pharmacists would support any reasonable local and state legislation designed to prohibit the sale of such drugs without prescription."

This vast majority of pharmacists, as well as the public, has a stake in adequate state enforcement. The responsibilities involved are already implicit or implied in the Federal statute. But it is impossible, and most states would consider it undesirable, for thorough local enforcement to be attempted from Washington. There will be renewed attempts to gain support for modern state food and drug legislation; we are at least obligated to give such proposals sympathetic consideration if they are not out of harmony with the Federal Act.

WANTED: IDEAS

NO ONE will ever know how many young men destined to be leaders in pharmacy, outstanding practitioners or brilliant researchers have been lost to the profession, and nation, in the war. As Justus J. Schifferes of the Science Publications Council recently observed, it may be inappropriate to weigh the losses to science on the scale of humanity's gains. But in the mounting casualty lists we can see the death of great ideas—sparks of genius given to only a few in each generation of a profession.

Dr. Schifferes' point is far from academic. In Congress and the press there are signs that we are waking up to an important fact: The United States, probably more than any other nation, has dissipated on the battlefield the scientific manpower on which modern progress so largely depends.

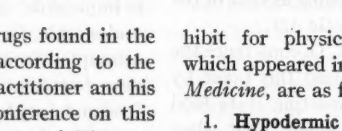
We must now make the best of it. Already the advanced guard of some 12,000,000 veterans is reaching home. Among these, pharmacy and the other professions and sciences must find men of vision to help fill the hollow spot left by the

war, to assure the improvement of national health and a high standard of living. For the first time, the G.I. Bill of Rights opens professional paths for youthful ability without financial barriers.

But if pharmacy is to move ahead we cannot leave to chance the selection of tomorrow's pharmacists. This is no abstract problem for "organized pharmacy." Tonight the pharmacist can write a friendly letter to his promising apprentice who is now somewhere overseas. The pharmaceutical educator can drop a note to that former student who would be eager to hear about the many faculty and research posts th will be open after the war. The laborato worker can invite the neighbor boy, the one w was an ambitious amateur chemist, to come in f a visit on his next furlough.

As Dr. Schifferes puts it:

In honored memory of the ideas, as well as t men, who died at Guadalcanal and on other Paci isles, in Normandy, at the Anzio beachhead and other once-trifling place-names on the Europe and African continents, sunk under the sea and sh flaming out of the air, American scientists mu provide an atmosphere where the ideas of the sti living boys can flourish and grow green.



DRUGS FOR THE PHYSICIAN'S BAG

THE number and kinds of drugs found in the physician's bag will vary according to the preferences of the individual practitioner and his type of practice. Yet, at a conference on this subject held by the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, it was concluded that "the doctor's bag seems to be in need of more serious attention than it commonly receives if it is to enable the physician to meet the majority of emergencies for which he may hope to be prepared."

Recognizing the opportunity for the pharmacist to aid physicians in deciding what should be in the bag, and what may be omitted, the St. Luke's Hospital pharmacy in Cleveland has had on display the exhibit of emergency medications illustrated on the opposite page. Evlyn Gray Scott, chief pharmacist, says that "the interest shown pointed out very clearly to us that here was a real pharmaceutical service that pharmacists could give to young physicians."

The drugs included in the exhibit were originally presented to the New York conference by Dr. Harry Gold of the Cornell staff as providing, as nearly as possible, means for meeting every emergency in which a drug may be very helpful or decisive. The drugs which must be supplied for the physician's bag will of course depend somewhat on the availability of emergency pharmaceutical service in a particular area.

For pharmacists in both hospital and retail practice who may wish to prepare a similar exhibit for physicians, Dr. Gold's suggestions which appeared in the *New York State Journal of Medicine*, are as follows:

1. **Hypodermic tablets of apomorphine hydrochloride,** $^1/_{10}$ gr. With these the stomach may be emptied very quickly and more certainly than by almost any other means. Mechanical stimulation of the pharynx is sometimes effective, but a great many patients will merely gag and not vomit.

2. **Syrup of ipecac** is a very useful agent to have in a bag. It can serve two major functions and perhaps some minor ones. It is about as effective an agent as we have to relieve a paroxysm of auricular tachycardia, and if there should be no apomorphine available, it could very well take its place as an emetic in a dose of 3 or 4 teaspoonfuls. Smaller doses would not insure rapid vomiting.

3. **Morphine sulfate.** Hypodermic tablets of $^1/_4$ gr. or a sterile solution of morphine in a vial are the most suitable forms. Tablets of codeine are useful, although not essential.

4. **Digitaline Nativelle,** 0.2-mg. tablets. If the patient is in advanced heart failure, give him 6 of these at one time, providing he has had little or no digitalis recently. It will digitalize safely in a few hours.

5. **Ouabain,** 2-cc. ampuls containing 0.5 mg. of ouabain each, ought to be in every bag for the emergency in which hours may be decisive or the patient is vomiting and oral digitalization is not feasible.

6. **Phenobarbital,** $^1/_2$-gr. tablets, as a sedative.

7. **Pentobarbital sodium,** $1^1/_2$-gr. capsules. If one gives a fairly large dose of pentobarbital sodium, 3 gr., one is fairly sure that the patient will fall asleep, with little likelihood of marked depression the following day.

8. **Phenobarbital sodium.** It comes in ampuls in the form of a powder. The 130-mg. ampul is the

most useful size. It is dissolved in water and injected subcutaneously.

9. **Ethyl chloride** in a spray tube. This may be used as a volatile anesthetic to control a convulsion. It may also be used as a local anesthetic to incise a boil. It is a great help to have ethyl chloride in the bag for the case in which the patient may have had the boil several days but calls you at 2 a. m. because the pain has increased beyond the limits of endurance.

10. **An ampul of 50% glucose,** 50 cc., would help to meet the emergency of an insulin shock.

11. **Ampuls of mecholyl,** 25 mg., for the attack of paroxysmal tachycardia. Give this dose subcutaneously when other less risky measures have failed. It rarely fails to terminate an attack promptly.

12. **Hypodermic tablets of atropine sulfate,** $^1/_{150}$ gr., are needed in connection with the mecholyl. One should avoid injecting a dose of mecholyl unless a dose of atropine is at hand in another syringe.

13. **Quinidine sulfate,** 5-gr. tablets. If a patient develops an attack of auricular fibrillation giving rise to a severe reaction with cardiac pain and cold and clammy skin, he presents an emergency case. A dose of 15 grs. every two hours will terminate the attack with dramatic relief.

14. **Ampuls of quinine dihydrochloride.** In case the disorder of rhythm is more serious, such as ventricular tachycardia following an acute coronary thrombosis and the ventricular rate is 180 a minute, oral medication may not suffice. Quinidine is not available in solution for intravenous injection. The soluble form of quinidine does not keep. We use quinine dihydrochloride, a 20-cc. ampul, which contains 32 mg. of quinine dihydrochloride per cc.

15. **Ampuls of mercupurin,** 2 cc., or some other organic mercurial diuretic. Every bag ought to have it to meet the condition of cardiac asthma or acute pulmonary edema. It does not act very quickly but after one has applied other measures one obtains more rapid recovery and insures against a recurrence by a prompt injection of a dose of mercupurin.

16. **Ampuls of theophylline ethylenediamine,** about $3^1/_2$ grs. in 10 cc. It is helpful in the case of status asthmaticus. In the typical case presenting an emergency, the trouble starts early in the evening. The patient has been taking epinephrine injections, but now he does not seem to be responding, and two or three hours later the sense of suffocation becomes extreme. An intravenous injection of about $3^1/_2$ grs. sometimes provides relief. There are other emergency uses for this ampul.

17. **Ampuls of epinephrine,** 1:1000 solution, 1 cc.

18. **Ampuls of ergotamine tartrate,** 1:1000 solution, 0.5 mg. per cc. This helps to meet the occasional attack of severe migraine. It may be given intramuscularly but is more effective if given intravenously.

19. **Ampuls of solution of posterior pituitary,** 1 cc. If one has any amount of obstetric practice, he might want to have this readily available.

20. **Vial of insulin.** This is useful for the emergency of acute diabetic coma.

21. **Hypodermic tablets of nitroglycerine,** $^1/_{150}$ gr. Ordinary tablet triturates are often so hard that they remain too long under the tongue without dissolving, whereas the hypodermic tablet disintegrates almost immediately. It relieves the attack of coronary insufficiency.

22. **Pearl of amyl nitrite.** This might be used for some of the more severe attacks of coronary insufficiency, since its action is almost instantaneous.

23. **Alcohol,** approximately 70% solution.

24. **Sulfanilamide powder.** Sterile packets are available to dust into a wound. Of course, it must be used with caution.

25. **Tablets of sulfadiazine,** $7^1/_2$ grs.

26. **Tablets of aspirin,** 5 grs.

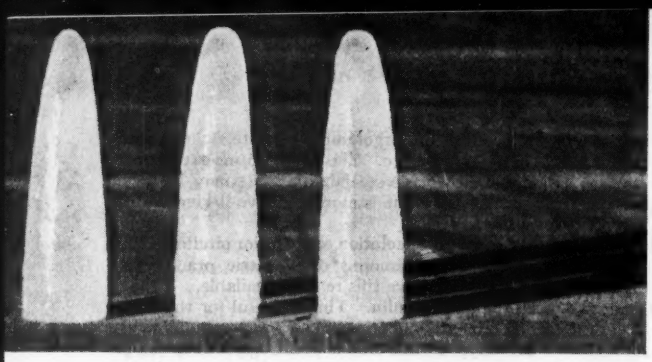
27. **Solution of ephedrine sulfate,** 1%, for relieving severe head symptoms resulting from acute sinusitis or nasal congestion. Any of the substitutes belonging to this class of preparation will do.

28. **Solution of picrotoxin,** 0.3%. A 20-cc. vial is available. It contains 3 mg. per cc. If one comes upon a case of barbiturate poisoning—an attempt at suicide with one of the hypnotics of the barbiturate group, with the respiration 3 or 4 a minute and signs of collapse—the injection of 10 mg. intravenously every twenty minutes until signs of hyperexcitability occur may add weight to the possibility of recovery.

29. **Solution of pontocaine,** 1%. This is a useful local anesthetic for topical application. One or two drops into the conjunctiva relieves a painful conjunctivitis and makes it easier to remove a foreign body from the eye.

30. **Ampuls of calcium gluconate.** A 10-cc. ampul of a 10% solution of calcium gluconate is available. I am not sure whether this ought to be carried about. But there are few agents that will act as effectively against an attack of lead colic. If one is engaged in practice in which lead colic is likely to be encountered, perhaps that person should have it.

In listing the chemical agents that should be found in the doctor's bag I have mentioned a use or two to which they might be put. These are merely suggestive. There are other emergency conditions in which some may prove helpful.



EMULSIFIERS IN

SELF-EMULSIFYING BASES MA IMPROVE DRUG ABSORPTION AN PERMIT HIGHER MELTING POIN

DESPITE the several well defined indications for use of the suppository,[1] the frequency of use has declined considerably in recent years. The loss in popularity has been attributed to a lack of certainty with regard to the dosage and effectiveness of drugs administered in this manner. Any marked decrease in the effectiveness of drugs administered by suppository must be due to an influence of the suppository base on the activity of the drug, since the suitability of the mucous surfaces of the vagina and the bowel for the prompt absorption of drugs has been well established.[1, 2] As early as 1897, Lewis and Eschbaum[3] pointed out the lack of logic in the all-purpose use of fatty bases, such as cocoa butter, in the manufacture of suppositories. Data obtained from recent studies on suppositories[1, 4] and ointment bases[5] support this view and indicate that fatty bases have a deleterious influence on the absorption and availability of both oil-soluble and water-soluble drugs.

It may be supposed that the availability of an oil-soluble drug present in a cocoa butter suppository will be reduced by virtue of an adverse distribution coefficient and the small area of contact between the cocoa butter and the aqueous fluid of the mucous surface involved.

Likewise, the availability of a water-soluble drug will be reduced. However, here one may look upon the cocoa butter as occluding or contaminating the absorptive surface of the mucous membrane.

According to current concepts,[1, 5] the deleterious effects of a fatty base, such as cocoa butter, may be overcome by the addition of a suitable emulsifying agent. The benefits that are gained by such a combination are threefold. In the first place, and most important, the greatly increased area of contact between suppository base and the mucous fluids that is afforded by emulsification *in situ* offers an increased opportunity for interchange of drug between base and mucous fluids and assures an increased availability for both oil-soluble and water-soluble drugs. Secondly, the presence of an efficient emulsifyingagent renders a suppository independent of the necessity for melting when placed in a body cavity. Accordingly, the melting point of such suppositories may be raised above the environmental temperature, even in tropical climates, without fear of interfering with their disintegration *in vivo*. Finally, greater amounts of aqueous liquids may be incorporated in cocoa butter suppositories containing an emulsifying agent.

In an attempt to attain the above-mentioned objectives, we have studied the ease of emulsification of cocoa butter when mixed with various concentrations of each of four common emulsifying agents. Our attention has been confined to those agents favoring the O/W type of emulsion, *viz:* lanette wax SX (sulfate esters), aerosol O.T. 50% aqueous, triethanolamine stearate, and glyceryl monostearate. At the time this study was initiated it was planned that agents favoring the W/O type of emulsion would also be studied, since it was our intention to investigate the relation between various suppository bases and the rate of absorption of drugs. The completion of the study, as projected, will have to await more favorable times.

Experimental Method

The emulsifying agent was added to the cocoa butter heated on a water bath, and the resulting mixture stirred until congealed. Each emulsifying agent was studied at several concentrations as follows: Aerosol 50% aqueous 5, 10, 20 and 30%; lanette wax SX 5, 10, 15, 20 and 35%; triethanolamine stearate 5, 10, 15 and 50%; and glyceryl monostearate 2, 5, 10, and 15%.

The suitability of the several agents and the effect of differences in concentration were determined in the following manner. The sample to be tested, in the form of a 2-Gm. rectal supposi-

Presented to the Section on Practical Pharmacy, AMERICAN PHARMACEUTICAL ASSOCIATION, 1944 meeting.

COCOA BUTTER SUPPOSITORIES

by PHILIP WAXMAN and JOHN J. EILER

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tory, together with 10 cc. of water, was placed in a 1 by 8-inch test tube. The test tube was placed in the holder of a shaking device, which was attached to a water bath in such a manner that the tube and its contents were maintained at 37° C. during a period of shaking. The shaking device was adjusted so that the tubes, in an upright position, experienced one moderately gentle to-and-fro excursion of about 3 inches every second. The shaking at 37° C. was continued for a period of twenty minutes during which time observations were made on the extent of the emulsification of the cocoa butter. The efficiency of the emulsifying agents, under the conditions of the test, was judged by estimating the amount of cocoa butter left unemulsified.

It is realized that this method of testing has only a vague relation to *in vivo* conditions, and is of use only in that it forms a basis for the comparison of the several emulsifying agents. It seemed advisable to adjust the movement of the machine so that its dispersive activity on the melted fat was not great. More vigorous shaking than that adopted would have permitted a much better showing for all of the emulsifying agents. However, in order to be effective *in vivo*, the agent should effect emulsification without much, if any, mechanical aid.

Results

The nature of the testing procedure obviates the necessity of giving a detailed account of the results. The most significant facts to emerge from the data are as follows:

(1) Except in the case of glyceryl monostearate, the mixtures containing 10% of the several emulsifying agents were definitely superior to those containing 5% of the same agents.

(2) The mixture containing 5% glyceryl monostearate was only slightly inferior to the mixture containing 10% of the same agent.

(3) In no case was any obvious advantage observed from the addition of more than 10% of any of the agents.

(4) A comparison of the several agents at the 10% level indicates the superiority of glyceryl monostearate, with triethanolamine stearate making the next best showing.

The results of additional studies indicate that glyceryl monostearate may prove useful in the manufacture of self-emulsifying cocoa butter suppositories. A determination of the melting point (U. S. P. XII, Class II substances) of properly aged mixtures of glyceryl monostearate and cocoa butter yields the following data: cocoa butter, 33° C.; 2% mixture, 33° C.; 5%, 35° C.; 10%, 37.5° C.; 15%, 41–42° C. Suppositories are easily prepared from the mixtures; one may use either the hot or cold process. The suppositories are nontoxic and do not cause irritation when inserted into the rectum.

REFERENCES

1. Eiler, J. J., "American Pharmacy," J. B. Lippincott, Philadelphia, 1943, Vol. 1 (in press).
2. Fantus, B., "General Technic of Medication," 3rd ed., American Medical Association, Chicago, 1937, p. 373.
3. Lewin and Eschbaum, *Proc. Amer. Pharm. Assoc.*, abs. 1897, p. 443.
4. Bird, J. C., THIS JOURNAL, *Sci. Ed.*, **26**, 475 (1937).
5. Busse, L. W., THIS JOURNAL, **4**, 314 (1943).

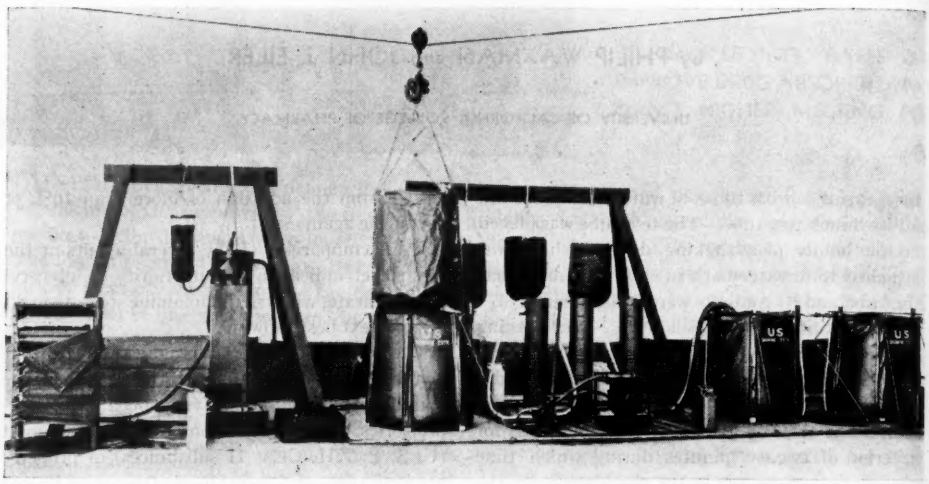
ARMY APPOINTS LIASON OFFICER TO COMMITTEE

Capt. Alan B. Huellmantel, MAC, Military Personnel Division of the Surgeon General's Office, has been named liason officer with the Committee on War Activities and Veterans' Affairs through an order issued by Surgeon General Kirk. Capt. Huellmantel is a pharmacist whose Army duties include classification and assignment of Medical Department officers in the Personnel Division.

The Committee had requested the appointment to obtain information and advice from the Surgeon General's Office on problems which come within its jurisdiction.

Committee personnel includes representatives of the A.PH.A., N.A.R.D., A.A.C.P. and N.A.B.P. In May the A. PH. A. Council expanded the scope of the Committee on War Activities to include verterans' affairs and made a corresponding change in name.

PORTABLE UNIT EXTRACTS CINCHONA ALKALOIDS



FROM basic research conducted at the Rutgers University College of Pharmacy by Maj. Robert Lee Kaye of the Army's Corps of Engineers, the War Department has developed a portable plant for extracting cinchona alkaloids. Set up in remote Latin American forests wherever there is a stand of cinchona trees, the new equipment would eliminate the traditional and difficult tasks of drying, grinding and transporting the bark to distant laboratories for processing.

About 172 pounds of alkaloids can be processed per month, or slightly more than 120,000 ten-grain doses. According to Maj. Kaye and Lt. Silvio E. Ronzone, who have headed the work of the Cinchona Research Unit for the Corps of Engineers, a ten-grain dose can be produced for about $0.0038. This price is somewhat lower than the wholesale cost of quinacrine in this country and only a fraction of the prewar cost of either quinine or totaquine.

Early investigations of acid extraction and the alkali precipitation method of recovery were made at the Rutger's Pharmacy College by Maj. Kaye with the cooperation of Dean Ernest Little and faculty members Prof. Martin S. Ulan and Dr. E. M. Durand. Pharmacy students also aided in the work.

With the feasibility of the method established, further experiments were undertaken in some of the Latin American countries to learn whether the process would be successful with undried bark. Fresh bark could not only be used, it was discovered, but better osmotic action during extraction made it possible to eliminate the customary grinding.

The extraction unit finally developed, shown in the accompanying photograph, weighs only 1500 pounds and may be easily dismantled for transportation through the forests by mule pack from one stand of cinchona trees to another.

The large sieve-bottomed bag, suspended from the cable, is filled with cinchona chips and lowered into one of the maceration tanks (marked "U. S."). Tenth-normal sulfuric acid percolates through the bag, extracting the alkaloids as water-soluble sulfates. Circulated through the three ion exchange columns (right center) the aqueous solution loses its sulfate ions and the alkaloids are retained in an adsorbing agent. Later, the *p*H of the ion exchanger is raised with sodium hydroxide, which releases the alkaloids as natural bases. The alkaloids are flushed out with ethyl alcohol and recovered in the charcoal-fired still, shown just to the left of the percolation bag. The totaquine, representing at least 90% of the alkaloids in the bark, is then dried on the cloth frames in the rack shown at the extreme left.

Although military requirements which originally stimulated development of the process have meanwhile been met, the new portable plants have significant peacetime possibilities for providing low-cost antimalarials. Soon the first plant will be placed in regular operation in Latin America by Cinchona Research Unit officers. About 300 such field units would be needed to produce 51,600 pounds of totaquine per month, the estimated amount required to supply the malaria-ridden areas of Latin America alone.

DANGERS FROM EXTERNAL USE OF SULFONAMIDES

STATEMENT AUTHORIZED BY

COUNCIL ON PHARMACY AND CHEMISTRY, AMERICAN MEDICAL ASSOCIATION

FREQUENT mention has been made of the dangers from the external use of the sulfonamides. Almost two years ago the Council adopted for publication[1] a statement reviewing the status of the local use of the sulfonamides and warned against indiscriminate use. Since that time other warnings have appeared.

Abramovitz[2] reviewed the dangers inherent in the local use of the sulfonamide compounds which apply not only to the skin but to the ear, eye, nose and even to prolonged dusting or packing in cavities. Abramovitz, however, thinks that the latter mode of administration provides fewer possibilities of later reactions.

The frequency of reactions is difficult to estimate, as probably many cases have never been reported. However, several significant studies have been made. Darke[3] reported sensitization in 5.5% of 218 minor surgical patients treated with a 5% sulfathiazole cream. Dermatologists are seeing many such cases, and recent conversation with an ophthalmologist revealed that an increasing number of cases of sensitivity to sulfonamides are being seen by men in that field. Downing[4] observed 300 serious cutaneous reactions where sulfonamides had been used in industrial dermatitis. J. H. Schwartz of Boston, in discussing the Abramovitz paper, reported that a man who used "nose drops" containing sulfonamides later contracted pneumonia and received sulfonamide therapy. A severe exfoliative dermatitis and anuria developed and the patient died. A member of the Council has likewise seen a death under even as bizarre conditions.

The type of cutaneous reaction varies greatly. It may be simply a local fixed reaction or there may be a generalization or an exfoliative dermatitis. The process may be further complicated because of the photosensitization that the patient develops. Relapses are not uncommon, and with scalp involvement there may be temporary loss of the hair. Most of the cases seen by dermatologists do not result from medication prescribed by the physician. Usually the patient has purchased freely a sulfonamide cream preparation for a skin disorder. Bloom[5] read a paper before the Section on Dermatology of the New York State Medical Society and introduced a resolution strongly disapproving the indiscriminate use of the sulfonamide drugs in relatively harmless disorders of the skin and recommending that the society condemn the use of prepared dressings containing sulfonamides which are sold promiscuously to the public. The Department of Health of the City of New York on Aug. 31, 1943, amended section 118 of the Sanitary Code to require a physician's prescription for sulfonamide drugs not only for internal use but for external use whether they are made available in the form of powders, ointments or sprays.

The therapeutic value of the sulfonamide compounds is well established, but they are undoubtedly often being used carelessly for skin lesions. Their use on the skin for ordinary skin disorders should be frowned on. Other measures should be employed first; then if local sulfonamide therapy is necessary it should not be continued for a period longer than five days because of the danger of sensitization of the patient. Further, such therapy should be employed only under a physician's direction.

One of the Council members who was on active service in the North African theater of operations has informed the Council concerning the strong recommendations which were issued by himself and a consulting physician against the local use of sulfonamide creams in the treatment of superficial skin infection. The recommendations were based on experience gained in this theater. The rate of sensitization from such creams appears to be far higher than that observed following the oral use of the drug. This bears special significance when it is realized that the value of such creams in superficial skin infections under ordinary conditions of use is so limited that their routine use is not warranted. According to the Council's informant, the local use of sulfonamide powders was not recommended except in perforating wounds of the abdomen. In this condition sulfanilamide is instilled in the peritoneal cavity and the procedure is considered an aid in reducing infection and a life-saving measure.

Special attention should be given to the possible dangers that exist in pediatric practice, *e. g.*, the possibility of harmful results following the routine use of suspensions of sulfonamides for the prevention of impetigo in nurseries.

There are real dangers from the external use of the sulfonamides, and such use should be limited to a comparatively few skin disorders which may

From the *Journal of the American Medical Association*, 128: 1024, 1945.

be effectively treated by a sulfonamide preparation. Only a physician can determine the condition most likely to respond, and even he should exercise careful judgment in prescribing and using a sulfonamide ointment, emulsion or other preparation. Claims supporting their value in "nose drops" and other similarly exploited preparations remain to be generally supported. Certainly there does not seem to be sufficient evidence to justify over-the-counter sale of any sulfonamide preparation, while on the other hand there is adequate evidence concerning the dangers of promiscuous use.

REFERENCES

1. *J. Am. Med. Assoc.*, **123,** 411 (Oct. 16), 1943.
2. Abramovitz, E. W.: "Hazards of the External Use of Sulfonamide Compounds," *Arch. Dermat. & Syph.*, **50,** 289 (Nov.), 1944.
3. Darke, R. A.: "Sensitivity to Topical Application of Sulfathiazole Ointment," *J. Am. Med. Assoc.*, **124,** 403 (Feb. 12), 1944.
4 Downing, J. G.: "Dermatophytosis and Occupational Dermatitis," *J. Am. Med. Assoc.*, **125,** 196 (May 20), 1944.
5 Bloom, D.: "The Danger of Cutaneous Reactions to Sulfonamides," *New York State J. Med.*, **43,** 1499 (Aug. 15), 1943.

MEASURES FOR CONTROLLING DERMATOPHYTOSIS

DESPITE the many newer medications that have been proposed for treatment of "athlete's foot," Whitfield's ointment and boric acid powder still stand up well in comparison, according to a report on dermatophytosis by the A. M. A.'s Council on Pharmacy and Chemistry (*J. Am. Med. Assoc.*, 128: 805, 1945).

Avoidance of over-treatment is re-emphasized in view of the danger of severe chemical dermatitides. The mildest types of local applications are still in order for acute forms, stronger preparations being reserved for subacute or chronic stages.

Of the newer preparations sodium proprionate is regarded as most promising. It has been used as both powder and ointment in 10% concentration. One of the clinical trials cited indicates that it may be preferred over undecylenate-undecylenic acid ointment. In tests by Weidman and Glass, 10% boric acid in powdered talc and metacresyl acetate (Cresatin) both appeared to be highly efficient as compared with a mixture of alkyl dimethyl-benzyl ammonium chlorides (Zephiran), potassium mercuric iodide (Pomeio) and iodocholeate (Iodolate). Whitfield's ointment ranked next to boric acid powder and Cresatin in efficiency.

In considering what medicaments could be safely recommended for self-treatment, the Council concluded: "Only one substance, boric acid, has therapeutic value and is safe for public use. Even here there is a hazard: the public may depend on it too much, *i. e.*, for severer forms which demand the services of the physician. . . . The public is bound to practice self-treatment of some kind and it may be better to encourage the use of boric acid than for the public to continue the use of iodine, camphorphenol mixtures and other damaging chemicals."

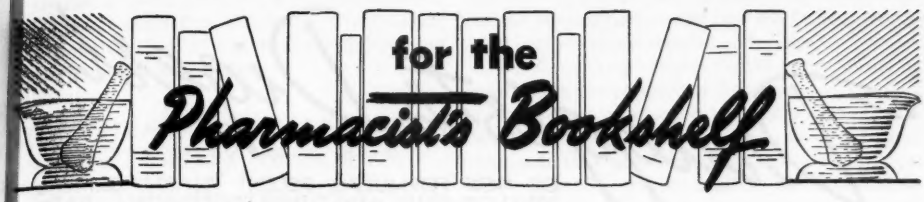
It is emphasized that "preparations containing iodine, mercury or sulfur are particularly dangerous, and sulfonamide preparations are notorious because they so frequently sensitize the individual to sulfonamide drugs which may be imperatively indicated later for a really serious ailment. . . . Under no circumstances should the patient yield to the well-meant recommendations of friends and to advertisements."

The following prophylactic measures may be recommended to the laity:

1. Keep the feet clean and dry, with special attention to places between the toes. Dry these carefully but not so hard as to irritate the skin.
2. Air shoes and socks when not in use.
3. Under special conditions keep the feet elevated when at rest (where the conditions predispose to intertrigo, as with marching soldiers).
4. Shoes should be selected that are as light and well aerated as is compatible with working conditions.
5. A dusting powder consisting of 10% boric acid in powdered talc should be dusted on the feet and between the toes every night and morning.

The prophylactic value of foot baths, such as sodium hypochlorite, was called "probably negligible."

When infection has occurred the sterilization of shoes may be necessary. For small numbers of shoes the following method is suggested: (1) Cleanse the shoes with mild soap and water. (2) Dry as well as possible with dry cloth. (3) Spread out a pad of cotton in each shoe to make an insole. (4) Pour onto the insole 1 teaspoonful of solution of formaldehyde U. S. P. diluted 1:10. (5) Put shoes in paper box, close lid and wrap in paper; let stand for at least six hours. (6) Remove shoes from box, throw away cotton and air shoes for twenty-four hours. (7) Apply saddle soap liberally inside and out and allow to dry. (8) Polish as usual.



PENICILLIN AND OTHER ANTIBIOTIC AGENTS—W. E. Herrell—*W. B. Saunders Co.*, Philadelphia; 348 pp., $5. Starts with historical development of antibiotics; quickly proceeds to treatise on penicillin that is probably the most complete and authoritative available. Last few chapters devoted to other antibiotics.

THE AUTOBIOGRAPHY OF SCIENCE—F. R. Moulton and J. J. Schifferes, Eds.—*Doubleday, Doran and Co.*, Garden City, N. Y.; 666 pp., $4. Great triumphs of science recorded in original words of those who achieved them. Choosing 100 selections with the foregoing objective is no enviable task, and there may be many who will disagree with the editors' choice. Nevertheless a fascinating and unique anthology.

THE AVITAMINOSES—W. H. Eddy and G. Dalldorf—*Williams and Wilkins Co.*, Baltimore; 438 pp., $4.50. Valuable aid to pharmacist or physician in culling and evaluating the vast field of vitamin literature. Three sections: (1) The Vitamins, (2) The Avitaminoses and (3) Technical Methods, Vitamin Assays and Vitamin Values. Thirty-two pages of references.

TAKE YOUR PLACE AT THE PEACE TABLE—Edward L. Bernays—*Duell, Sloan & Pearce, Inc.*, 270 Madison Ave., New York 16; 60 pp., $1. Stimulating discussion by a leading publicist, emphasizing what the individual can do for world peace. Also of importance and lasting value to pharmaceutical organization men for its revealing discussion of promotion and public relations techniques. Sources of material and specialized assistance in appendix.

FATS AND OILS, AN OUTLINE OF THEIR CHEMISTRY AND TECHNOLOGY—H. G. Kirschenbauer—*Reinhold Publishing Co.*, New York, N. Y.; 154 pp., $2.75. Concise background information on the fundamentals of fat chemistry and technology. Generous sprinkling of tabular data.

DIGEST OF NATIONAL CONFERENCE ON POSTWAR VENEREAL DISEASE CONTROL—*American Social Hygiene Assoc.*, 1790 Broadway, New York 19; 43 pp., $0.10.

DIAGNOSTIC PROCEDURES AND REAGENTS—*American Public Health Association*, 1790 Broadway, New York 19; 549 pp., $2.75.

PRESCRIPTION RECORD FORMS—*Owens Illinois Glass Co.*, Prescription Ware Div., Toledo 1, O.; 90-day supply of forms free on request. Convenient daily accounting method.

MEDICINAL PRODUCTS: U. S. EQUIVALENTS AND ALTERNATIVES—G. R. Tompkins and S. N. Samuelsen—*Superintendent of Documents*, Washington 25, D. C.; 107 pp., $0.50. Titles and descriptions of drug products, mainly of European origin, used in the Spanish-speaking Americas, together with equivalent or alternative U. S. products and sources of supply. Comprehensive and easy to use. Prepared by the Drugs and Pharmaceuticals Unit of the Bureau of Foreign and Domestic Commerce in the Department of Commerce to broaden our service to South American medicine and pharmacy.

AN INDEX OF MODERN REMEDIES—William Mair—*Scottish Chemist*, 240 Albert Drive, Pollokshields, Glasgow, S.1; 67 pp., $0.50. All official and many nonofficial British drugs conveniently classified.

COMMON DISEASES OF FARM ANIMALS AND POULTRY—W. C. Butler—*McKesson and Robbins, Inc.*, New York, N. Y.; 96 pp. Prepared by a veterinarian for distribution in pharmacies.

HYPO-ALLERGENIC COSMETICS—*Marcelle Cosmetics*, 1741 N. Western Ave., Chicago, Ill.—24 pp., free on request. Manufacture of cosmetics in pictures and captions.

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Druggists' Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

PENICILLIN ADSORBED ON METALLIC HYDROXIDE FOR ORAL USE

Penicillin sodium adsorbed on either aluminum hydroxide or magnesium hydroxide results in prolonged blood concentrations of the drug when taken orally, tests by Dr. Henry Welch and associates at the Food and Drug Administration indicate (*J. Am. Med Assoc.*, 128: 847, 1945).

The modified penicillin was prepared by dissolving 100,000 units in 20 cc. of water and adding dropwise, with constant agitation, 30 cc. of aluminum hydroxide U. S. P. For the tests on magnesium hydroxide, 22 cc. of magnesia magma U. S. P. was added dropwise to 100,000 units of penicillin dissolved in 28 cc. of water. Stability seemed to be similar to that of penicillin sodium in distilled water since at 10° C. both mixtures were stable for at least thirty days. Since the penicillin may be combined with the hydroxide just before administration no stability problem need be involved.

Blood levels of from 0.03 to 0.19 unit per cc. are obtained for as long as twenty-four hours after the administration of 100,000 units in four doses of 25,000 units two hours apart, Dr. Welch reports. The first dose was given at 10 a. m., two to three hours after breakfast. Higher levels may be maintained by increasing the frequency of the doses.

Although therapeutic trial of this dosage form has not yet been reported, it is suggested that the level of penicillin maintained in the blood may be "effective in some diseases but . . . in all likelihood it will not be effective in others."

ANTIMALARIAL SUPPLIES ADEQUATE

Adequate supplies of antimalarials are available to meet civilian needs, including treatment of a small percentage of discharged servicemen who may have periods of relapse, the War Production Board has assured pharmacists.

Quinacrine is readily available for both oral and parenteral use. Quinine may be obtained only in ampuls for parenteral use, but totaquine supplies are sufficient to meet all requests for natural antimalarials.

Veterans may occasionally create a need for these drugs in pharmacies which do not ordinarily stock them. In such instances, WPB advises that supplies be obtained through the usual channels of distribution.

SURVEY OF PHARMACY IN PUBLIC HEALTH SERVICE BEING COMPLETED

The Committee appointed by the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION to conduct the survey of pharmaceutical activities in the Public Health Service, at the request of Surgeon General Parran, met at the Statler Hotel in Washington on July 6 and 7 to receive the preliminary report of its chairman and study the data which had been accumulated.

There was a full attendance of the Committee and Assistant Surgeon General R. C. Williams and Public Health Service Pharmacists R. D. Kinsey and T. A. Foster conferred with the Committee on several phases of the survey. Miss Mary Switzer of the Office of the Administrator of the Federal Security Agency also met with the Committee at one of its sessions.

Practically the entire first day of the meeting was devoted to a study of the organization charts of the U. S. Public Health Service to determine functions which its pharmacists are in a position to discharge. At this session the informal report of the chairman covering his surveys of various Marine Hospitals was also considered.

Much of the second day's session was devoted to a discussion of minimum pharmacy standards for U. S. Public Health Service hospitals and a discussion of personnel.

Attention was also given to the type of specialized training which can be given in colleges of pharmacy to prepare graduates for special public health services.

The Committee also discussed the recruitment of qualified pharmaceutical personnel for the U. S. Public Health Service and assigned a number of tasks to subcommittees for completion.

It is anticipated that the survey will be completed within a month, and the Committee will then prepare its final report for submission to the Surgeon General.

Members of the Committee, all of whom were in attendance, include Troy C. Daniels, Don Francke, Ivor Griffith, Albert P. Lauve, Louis C. Zopf and Robert P. Fischelis, chairman.

STUDY ON BARBITURATE LEGISLATION UNDERTAKEN BY THE A. PH. A.

A thorough study of present controls on the dispensing of barbituric acid compounds has been undertaken by the A. PH. A. Committee on Legislation at the request of the Council. On July 12, A. L. I. Winne, Committee chairman, met with the A. PH. A. secretary at the headquarters building to review answers to a questionnaire on this subject which had been issued to all state boards of pharmacy.

A digest has been prepared of the opinions voiced with respect to the type of control apparently needed to curb promiscuous distribution of barbiturates, and a file of all existing state laws has been assembled.

The Committee will soon have ready a complete report on this subject, including a series of recommendations for future action to control the traffic in hypnotic drugs. It is possible that a conference of various pharmaceutical and medical groups may be called to consider the next step in the program of providing suitable regulation.

NEW A.M.A. COMMITTEE SPONSORS THERAPEUTIC TRIALS OF DRUGS

The Therapeutic Trials Committee of the Council on Pharmacy and Chemistry of the American Medical Association met in Chicago on July 17 with a group of representatives from the American Drug Manufacturers Association and the American Pharmaceutical Manufacturers Association for an informal discussion of the procedure of the Committee in making its services available to foster clinical research on new drugs or known drugs which may have new therapeutic uses.

In the past the Council usually has considered drugs only after the evidence of therapeutic value has been accumulated. It has not initiated clinical trials on substances fresh from the laboratory. However, it has watched and its members have participated in the activities of the Office of Scientific Research and Development and the National Research Council. In the belief that the cooperative clinical research instituted during this war is valuable and that the British Therapeutic Trials Committee has proved its usefulness, the Council is of the opinion that its facilities and contacts should be used to further such work if it is necessary to supplement the work of the O. S. R. D.

The Therapeutic Trials Committee, formed to consider such a project, believes that its activities at the present time should take the form of mediation between manufacturers and clinics.

The Committee believes that the work should be confined to new products of definite and outstanding promise on which adequate laboratory work is available; that the Committee should have full jurisdiction in the choice of products that it would sponsor; that the costs incurred in the actual trials should be the subject of contract between the manufacturer and the clinic conducting the trials.

At the invitation of the Committee, Dr. R. P. Fischelis, secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION, attended the meeting of the Committee to represent the pharmaceutical profession.

The Committee's activities are expected to get under way on a limited scale in the near future.

U. S. PUBLIC HEALTH SERVICE COMMISSIONS 15 PHARMACISTS

Reserve commissions as U. S. Public Health Service pharmacist-officers have recently been granted to 15 pharmacists heretofore employed under Civil Service ratings. The commissions in both the active and inactive classifications were made in grades ranging from junior assistant, the equivalent of second lieutenant in the Army, to the full grade, which corresponds to a major. Those commissioned in the active reserve were:

Full grade: M. E. Berkowitz, Marine Hospital, New Orleans, La.; S. H. Butler, Marine Hospital, Carville, La.; and D. J. Gleason, Marine Hospital, Louisville, Ky.

Senior assistant: C. L. Jones, Public Health Service Dispensary, Washington, D. C.; and D. D. Wendel, Service Headquarters, Washington, D. C.

Assistant grade: G. F. Leefe, Marine Hospital, New Orleans, La.; and R. M. Hovey, Marine Hospital, Mobile, Ala.

Junior assistant: W. M. Hanna, Marine Hospital, Baltimore, Md.; J. V. Wright, Marine Hospital, Galveston, Tex.; and E. J. Simnacher, Public Health Service Hospital, Fort Worth, Tex.

Those commissioned in the inactive reserve, although actually on full-time duty under their Civil Service appointments, were:

Full grade: G. B. Hutchison, Supply Depot, Perry Point, Md.; and Clyde Ritter, Marine Hospital, 67 Hudson St., New York, N. Y.

Senior Assistant: Mrs. Margaret S. Gary, Marine Hospital, Norfolk, Va.; and J. A. Wolfe, Marine Hospital, Staten Island, N. Y.

Assistant: F. A. Stump, Public Health Service Dispensary, Washington, D. C.

Other pharmacists holding commissions in the U. S. Public Health Service are: *Regular Corps, full grade*—T. C. Armstrong, Marine Hospital, Staten Island, N. Y.; and R. D. Kinsey, Service Head-

quarters, Washington, D. C.; *Reserve Corps, full grade*—T. A. Foster, Service Headquarters, Washington, D. C.

In connection with the survey of pharmaceutical service in the U. S. Public Health Service, Dr. Robert P. Fischelis, A. PH. A. secretary, has been commissioned as a senior pharmacist (inactive Reserve), equivalent to a lieutenant colonel in the Army.

PHILADELPHIA COLLEGE CONFERS DEGREE ON A PH. A. SECRETARY

An honorary degree of Doctor of Science was conferred upon Dr. Robert P. Fischelis, A. PH. A. secretary, at the midsummer graduation exercises of the Philadelphia College of Pharmacy and Science. In presenting the degree, Dr. Ambrose Hunsberger, vice-president of the College, cited Dr. Fischelis' "unflagging devotion to the public health and welfare through honest, earnest pharmaceutical service . . . important work in the War Production Board . . . and now, as leader of the thinking and acting of the AMERICAN PHARMACEUTICAL ASSOCIATION," his contributions in "exploring and charting new ways to use the coming days of peace for the greatest good of humanity."

Dr. Fischelis, who gave the commencement address, reminded the graduates that "it is not only your duty to make a contribution to the welfare of humanity . . . in the field of medical care, or elsewhere, but it is also your duty to apply your trained intellect and your social conscience to the molding of a better world.

"It is unfortunate," he continued, "that many who are trained for the sciences and professions become so absorbed in their immediate objectives that they never acquire an understanding of their relationship to the world at large. Let us hope that you will not fall into the habit of bounding your horizons by high walls of selfish interest."

In meeting the challenge with which the professions and the world confront the new graduates, Dr. Fischelis urged that they bring to the solution of problems, above all, a disciplined mind—a mind that refuses to accept hearsay for fact. He asked that they help bring the sound ethical concepts of the health professions to the solution of world problems.

PENICILLIN INJECTED INTO ARTERIES

In what is probably the first series of cases treated by intra-arterial injections of penicillin, successful results were reported in 24 patients with infections of the extremities. The new method of administration may assume considerable importance in view of the high incidence of traumatic lesions in industry and on the battlefield.

Avoidance of amputation or use of lower amputation sites, and primary closure of the stump in the presence of infection are among the advantages mentioned in the report by Drs. S. Thomas Glasser, John Herrlin, Jr. and Boris Pollock of New York (*J. Am. Med. Assoc.*, 128: 796, 1945). Intra-arterial injections are economical and rapid in effect, permitting higher local concentrations of penicillin than would otherwise be obtainable.

The efficacy of the method was shown in a number of severe intractable types of infection and the authors place particular emphasis on treating infections of the extremities which occur as a complication of arteriosclerosis with or without diabetes. Extension of the preliminary studies is expected to widen the scope of this method of administration.

A dosage of 50,000 units of penicillin per injection, dissolved in isotonic saline solution, was used empirically. No contraindications were encountered..

A. PH. A. PARTICIPATES IN TRAINING INSPECTORS OF SURPLUS PROPERTY

An inspection training course on professional and scientific supplies and equipment was held in New York City the first week of August for representatives of the Office of Surplus Property. Dr. Robert P. Fischelis, A. PH. A. secretary, lectured on the over-all scope of the pharmaceutical field, while representatives of industry and government discussed specific phases of the pharmaceutical surplus supply problem.

The course was designed to give inspectors the background information to handle professional supplies properly and write the necessary specifications.

SINGLE INJECTION OF PENICILLIN MIXTURE EFFECTIVE IN GONORRHEA

Disappearance of subjective symptoms of gonorrhea within seven hours, rapid cessation of purulent discharge and early attainment of negative bacteriologic findings are among the striking features of treatment by a single injection of calcium penicillin (150,000 units) in beeswax and peanut oil. No failures occurred in a series of 75 patients with gonorrheal infection. Of 100 patients receiving a single injection of only 100,000 units 93 were cured, and the remaining 7 responded to a second injection of 150,000 units. Investigators at the Army's Walter Reed General Hospital in Washington, D. C., who reported these results are Capt. M. J. Romansky, Capt. R. J. Murphy and T/3 G. E. Rittman.

The single injection of calcium penicillin in bees-

wax and peanut oil produced and maintained assayable levels of penicillin in the blood for seven and one-half to ten hours, with urinary excretion of penicillin continuing for twenty-four to thirty hours. No abnormal reactions locally or constitutionally were observed.

In preparing the penicillin beeswax-peanut oil suspension, a satisfactory product is contingent on the use of the calcium salt of penicillin, highly refined peanut oil and bleached beeswax U. S. P.

For small quantities the suspension is obtained by shaking the mixture ten or fifteen minutes by hand. For larger quantities a mechanical blender has proved more efficient and practical. The method of preparation was described (*J. Am. Med. Assoc.*, 128: 404, 1945) as follows:

> The peanut oil is sterilized by filtering through a Seitz filter, then passing it through six layers of sterile gauze or a sintered glass filter, and finally autoclaving at 17 pounds of steam pressure for twenty minutes. The beeswax is heated to a liquid state, filtered through six layers of sterile gauze and then autoclaved at 17 pounds of steam pressure for twenty minutes. The most satisfactory mixture was 100,000 units of calcium penicillin in 1 cc. of 4% by volume (3.2% by weight) beeswax in peanut oil.
>
> This can be prepared in the following manner: The desired quantity of penicillin is placed in the sterile mechanical blender or mixer, and to this is added 1 cc. of a sterile 4% mixture of beeswax in peanut oil for each 100,000 units of penicillin. (The beeswax-peanut oil is heated until clear prior to adding it to the penicillin.) The mixture is then blended until the penicillin is completely suspended in the beeswax-peanut oil. At this time the mixture is sufficiently liquid so that it will not only pass through a 19- or 20-gage needle but will even go through a 26-gage needle.
>
> Stability studies, to be published later, indicated that this material showed no loss in potency after being stored for six months at ice box, room and 37° C. temperatures.

In other studies now being conducted a single daily injection of penicillin in beeswax and peanut oil has proved effective in pneumonia, impetigo, staphylococcic infections and other conditions which respond to penicillin in saline solution.

PENICILLIN CURES VINCENT'S ANGINA

"Penicillin is a remarkably effective agent in the treatment of Vincent's angina," according to a clinical report by Maj. P. L. Shallenberger, Lt. Col. E. R. Denny and Maj. H. D. Pyle of the Army Medical Corps, which confirms earlier work by the same investigators.

Except for two patients treated intramuscularly, the penicillin was applied locally by swabbing the involved tissues with penicillin solution, 500 units per cc., four times daily. Daily smears were obtained and treatment continued until smears were negative for Vincent's organisms. In all but 1 of 9 cases, treatment was discontinued after two to five days.

Acetylsalicylic acid, 5 gr. as indicated for pain, was the only supportive treatment given.

HONORARY PRESIDENT LEONARD A. SELTZER DIES

Leonard A. Seltzer, honorary president of the AMERICAN PHARMACEUTICAL ASSOCIATION, died in Detroit on July 24. He was seventy-four years old. A life member of the ASSOCIATION, Dr. Seltzer played an active role in its affairs since 1899.

Born the son of a pharmacist, he entered the University of Michigan College of Pharmacy after receiving his public school education in Joliet, Ill. Following graduation in 1892, nearly four years were spent in the pharmacy of F. W. R. Perry, a leading pharmacist of that day and an active A. PH. A. member. Later, Dr. Seltzer was employed for a time in the experimental laboratories of Parke, Davis and Company but soon returned to his primary interest: retail pharmacy. In 1896 he opened a prescription shop in Detroit in partnership with his former employer, Mr. Perry, who withdrew from the venture two years later. Soon the establishment outgrew its quarters and was moved to its present location in the Kresge Building. Always devoted to high standards of pharmaceutical practice and scientific competence, Dr. Seltzer and his pharmacy rapidly became nationally known in the profession.

In 1909 he served as chairman of the A. PH. A.'s Section on Practical Pharmacy and Dispensing. By 1914 he was a member of the Michigan Board of Pharmacy, and in that same year headed the local committee for what proved to be one of the outstanding A. PH. A. conventions. The late honorary president of the ASSOCIATION had held the posts of first, second and third vice-president, vice-chairman of the House of Delegates and in 1927 became chairman of the House.

His interest in scientific advancement in pharmacy culminated in outstanding contributions as a member of the revision committee for U. S. P. X, XI, XII and XIII and of the Committee on National Formulary for N. F. IV, V and VI.

Various local and state pharmaceutical organizations and professional committees also benefited by Dr. Seltzer's active participation and guidance. In recognition of these many services to the profession he was awarded an honorary Master of Science degree by the University of Michigan, the honorary degree of Master in Pharmacy by the Philadelphia College of Pharmacy and Science, and an honorary Doctor of Science degree by Wayne University.

The Hospital Pharmacist

EDITORIAL

MINIMUM STANDARDS IN HOSPITAL PHARMACY

by DONALD A. CLARKE

CHAIRMAN, COMMITTEE ON MINIMUM STANDARDS, AMERICAN SOCIETY OF HOSPITAL PHARMACISTS

MINIMUM standards for the practice of hospital pharmacy are currently receiving attention. As time goes on, they will receive considerably more aggressive attention. The Committee on Minimum Standards of the American Society of Hospital Pharmacists has been assigned the responsibility of getting this question under consideration and eventually resolved. One problem will be studied at a time. For, of necessity, several years will be required for planning, study and execution on a scale calculated to meet the ideals and requirements of the accepted hospitals of the United States.

Viewed from present tendencies, it appears that many more hospitals will enter our community scene and, likewise, many more people will have their illnesses treated by means of hospital facilities. As evidence of this tendency one need only observe the comprehensive medical care programs and hospitalization programs already playing an important role in community activities. They are proving so satisfactory that the future will demand tremendous developments along these lines; for progress and improvement to benefit our population is an American characteristic.

With this tendency toward more complete hospital management of disease (either through community projects, industry, trade union activities or the activities of private or mutual benefit groups) one may anticipate the gradual curtailment of private medical practice. The private practitioner will more extensively concentrate his activities in hospital channels where he will find increased professional contacts and competitive spirit, better opportunity for consultations and education and will benefit by the highly specialized personnel and equipment found in hospitals. With these progressive steps the individual and the community will benefit immeasurably and directly because of the greater efficiency of a group of specialists working jointly and synchronously for the individual.

And with this curtailment of private medical practice as we know it today, we may foresee less need of the traditional retail pharmacy in many localities. The compounding pharmacist will find as principal locations for the practice of his profession: the manufacturer's laboratories, the hospital pharmacy and the prescription shop located near clinics and medical centers. We propose to make hospital pharmacy ready for this development which is already under way.

Admittedly, hospital pharmacy, generally, has not been practiced on too high a plane. There have been extenuating circumstances which have perpetuated this situation. On the other hand, there have been and continue to be many places where hospital pharmacy is practiced on a plane so superior to any other specialty of pharmacy that the situations are incomparable. These instances, however, are too few. We propose to see the whole of hospital pharmacy practiced on a high plane, and we will tolerate no interference from those who insist on retention of the status

quo. Truly, there is a big job to be done. But it has to be done and hospital pharmacy will do it.

There will be toes stepped on. The profession of pharmacy will have to change to meet the new day—and meet it bravely. We cannot countenance the type of pharmaceutical practitioner who has exhibited his colors recently in legislative attempts to reduce academic standards. If anything, academic standards must be elevated. The humilitation inherent in the present situation should be incentive to assure that our future pharmacists will be able to handle themselves in an informed and intelligent fashion on matters concerning the medical sciences. For proof of this statement, this writer suggests either of two tests: Stand at a counter in an average retail drugstore and note the kind of answer many druggists proffer to an intelligent question dealing with a matter touching on the basic science of physiology. Or attend a scientific meeting where a researcher has been invited to discuss a topic of current medical interest and where the audience is composed mainly of practicing pharmacists, regardless of specialty. Listen to the questions asked during the discussion period.

This writer, recently, had occasion to discuss publicly, before a group of physicians, pharmacists and medical students, the current misunderstandings between pharmacy and medicine and, incidentally, the situation in which pharmacy finds itself today. In analysis, the blame was placed mainly on three different factors. One such factor was that medical education is about thirty years ahead of pharmaceutical education. The reason seems to be the fault of our preceptors who failed to recognize and translate into action the change in the approach to and background of the treatment of disease. Another factor was that a great many physicians in practice during the early years of the twentieth century continued to employ decadent pharmacology even while the medical student was being taught the new pharmacology and the practitioners should have been learning it from the literature. As a result of the latter, pharmaceutical education long remained static, lulled by what seemed to be a continuation of that which had been done in the past. Eventually these older medical practitioners passed from the scene and we of pharmacy now find ourselves sadly deficient.

Hospital pharmacy proposes to start from fundamentals and first ascertain that pharmaceutical education is sound, adequate and, above all, progressive. This will be accomplished in part by the establishment of hospital pharmacy internships, the subject of current interest in the Minimum Standards Committee of the A. S. H. P. But there must be changes in the college curricula, it appears, to prepare the student with the knowledge he will need to execute such an internship properly. These changes, the necessity for which is even now evident, will be brought out more sharply as experience is gained by wide adoption of the internship program, where educational weaknesses automatically become evident. We will expect our educational system to be modified accordingly. We are already in a new era and the challenge is around us as well as in front of us.

Nor can we tolerate perpetuation of decadent pharmacology. For example, in a recent state board examination, a question was asked which was, at best, irrelevant to modern pharmacy. Out of a group of questions, several of which were elective, this disturbing question was required: It asked for the constituents of powder of mercury with chalk; it asked how to dry the powder and why the preparation could not be triturated. This compound has long since passed from the legitimate armamentarium. Many modern texts on pharmacology frankly state that mercury probably *never* cured a case of syphilis—the main use years ago for mercury with chalk. As a laxative, mercury with chalk has long since been superseded by superior agents.

Mercury with chalk has no place in the modern therapy of syphilis. With penicillin on the horizon as the most potent, nontoxic, antisyphilitic agent yet known, a drug which promises to eradicate this scourge of humanity from our community, the fact that one of our state boards would insist on such a question is disconcerting. The fact that this powder is embraced in the Pharmacopœia is no excuse. Even the U. S. P. is not above criticism and this is one such instance. Obviously our state boards should examine young pharmacists at least in terms of modern pharmacy and pharmacology.

This situation illustrates our main argument: There has got to be an overhauling, a generalized house cleaning. Hospital pharmacy, for its part, is out to tackle the part of the job that pertains to its practice. We promise this to the profession of pharmacy. We promise this platform to the hospitals of our nation and to the allied medical sciences that are striving so brilliantly to improve the practice of medicine.

PREPARING ALLERGENIC SOLUTIONS

by A. J. GIBSON and ANNE BOSSBACH
HEALTH SERVICE PHARMACY, UNIVERSITY OF MICHIGAN

DIAGNOSTIC AND DESENSITIZING SOLUTIONS MAY BE PREPARED BY THE HOSPITAL PHARMACIST, RAPID METHOD DESCRIBED FOR ANALYSIS OF TOTAL NITROGEN

ALLERGY is one of the newer specialties in the medical world which opens up an important field of service for the institutional pharmacist. It is our purpose to review briefly the subject of allergy and outline a practical, rapid method of quantitative analysis of the nitrogen factor of allergenic solutions.

In defining the term allergy the editors of *The Journal of Allergy*[1] state: "The term is generally employed by clinicians who apply it to conditions of specific hypersensitiveness exclusive of anaphylaxis in the lower animals." But, for our purpose, we can say allergy is a term denoting varying degrees of sensitivity to certain foods, pollens, epidermals and other agents with which a person may come in contact in his everyday life.

Allergy is comparatively new as one of the specialties of medicine. Vaughan[2] states that only within the last two score years has allergy been established and that the development of this field has been phenomenal. That a good share of the population is sensitized to some degree has been established.

Jimenez,[3] in a study of some 7000 students entering the University of Michigan, found that 35% gave a history of sensitization. In a recent economic survey of a city of 35,000, Service[4] reports approximately 45% of families had some form of allergy, while 20% of the general population was sensitized. Bernton,[5] quoting Vaughan, states that 50% of the total population has minor allergy.

It is obvious, if 35 to 50% of the population is allergic in varying degrees to the things common to their everyday life, that a large unexplored field is open to the pharmacist in the manufacture and standardization of allergenic solutions. Few physicians in the practice of allergy have the time or facilities necessary to prepare their own diagnostic and desensitizing solutions. This is particularly true of the sensitization clinics of hospitals and institutions where the emphasis is on clinical interpretation rather than on the manufacture of parenteral solutions for diagnosis and treatment. On the other hand, it is apparent that the hospital pharmacy is the logical place, as the objective here is primarily one of manufacturing and dispensing.

To formulate a complete picture of allergy would require a thorough résumé of the literature published. This is too voluminous in scope for the writers to present more than a few of the highlights of this subject, together with a method of preparing and standardizing the diagnostic and therapeutic solutions. It is hoped this will give the pharmacist a generalized picture of allergy and how it can be made to fit into his own work.

1. METHODS OF TESTING FOR SENSITIVITY TO ALLERGENS

The scratch method is advocated by some, and the intracutaneous or intradermal system is preferred by others. As the first implies, a minute amount of the powder (thought to cause the allergic condition), or a bit of the powder in solution, is rubbed into a scratch on the skin of the forearm or back. The second method involves injection of a fraction of a cubic centimeter of dilute solution just beneath the epidermal layer. Smyth and Bain[6] point out the scratch method is preferred by Schloss[7], Walker[8] and Peshkin,[9] whereas Cooke[10] and Coca[11] prefer the intradermal method of testing for sensitivity. In testing for the cause of hay fever in their patients, Cunningham and Wolfee[12] used the scratch test. Solutions of 1% concentration were used.

2. THE MEASUREMENT OF THE ACTIVITY OF EXTRACTS OF POLLENS, FOODS, EPIDERMALS AND OTHER ALLERGENS

The problem of whether or not the pharmacist should assay and standardize the stock solutions he has prepared is not difficult to decide. From an economic viewpoint, sterile parenteral stock solutions prepared on a weight per volume basis may be satisfactory for the inexpensive pollens

such as giant and short ragweed, but this is hardly acceptable for expensive foods or epidermal powders and others purchased for this purpose. However, the paramount reason why a quantitative analysis of the extracts should be made is that the accepted gauge of the activity of the materials is at present based on the protein nitrogen or the total nitrogen content. The necessity of an analysis of these solutions has also been stressed by Vaughan.[13]

True, the clinicians are not in agreement whether the protein nitrogen or total nitrogen is the most satisfactory yardstick of measurement of activity. Stull,[14] Cooke[15] and Chobot,[16] Cooke and Stull,[17] and Cook and Tennant,[18] in studies on pollens of ragweeds and grasses, conclude that the protein fraction is the active allergenic constituent. Unger, Moore, Cromwell and Seeber,[19] as well as Abramson, Sookne and Moyer[20] along with Langner and Kern[21] support this view. However Coca,[22] Bowman,[23] Cohen and Goodale[24] assay the extracts for the total nitrogen content. In studying the aging effect on solutions or extracts of wheat, egg white, egg yolk, milk and whey protein, Alles, Piness and Miller[25] determined the total nitrogen as a measurement of activity. A publication by Arbesman and Eagle[26] points out the the reagin-neutralizing activity of pollen solutions is, in their opinion, the proper approach to the quantitative measurement of potency.

From the foregoing, it is clear that the pharmacist has at least two acceptable systems of analysis at his disposal. One, to assay for the protein nitrogen; the other, to assay for the total nitrogen factor. The first involves the separation of the protein fraction by precipitation, and as would be expected this procedure requires additional apparatus and time which must be considered when preparing a large variety of solutions.

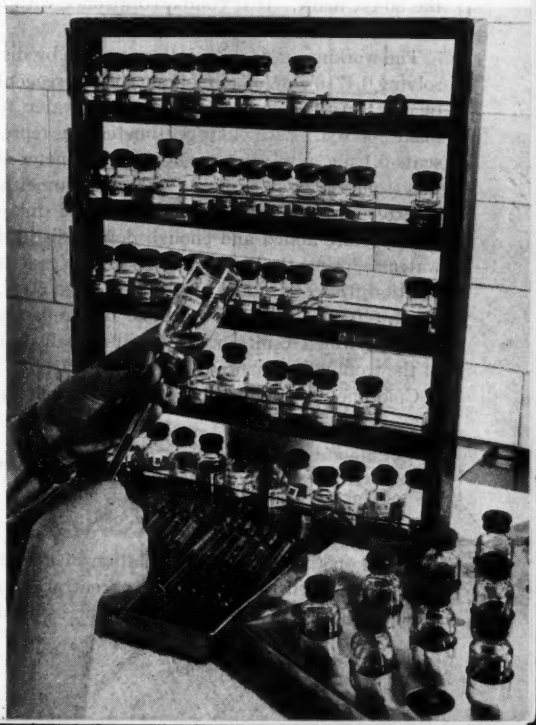
In this laboratory, analysis for the total nitrogen content as a measurement of potency has proved satisfactory. The period covered is six and one-half years in which the allergy clinic of this institution has routinely been supplied with some 200 varieties of extracts. The sterile, assayed solutions furnished are diluted to the total nitrogen content desired—usually 0.02 mg. per cc.—and placed in sterile serum vials of 10 cc. capacity for dispensing. The stopper used is the conventional rubber diaphragm type which is punctured for withdrawal of the solution with a syringe.

3. THE PROCEDURE OF MANUFACTURE, ANALYSIS AND STANDARDIZATION OF THE SOLUTIONS

Based on a previous experimental analysis for the total nitrogen of the material, from 5 to 20 mg. of powder per cubic centimeter of desired extract is weighed out on a prescription balance. This is transferred to a sterile glass-stoppered 125-cc. Erlenmeyer flask containing a few glass beads. Approximately 30 cc. of the extracting fluid, consisting of 5% dextrose and 0.5% phenol in distilled water, is then added, the mixture shaken vigorously and set aside for twenty-four to forty-eight hours.

As Unger and Moore[27] have pointed out, allergenic solutions prepared with 5% dextrose are far less painful when injected intracutaneously, than saline or glycero-saline solutions. In addition, they compare favorably with glycero-saline in stability.

The extracted solution is decanted and filtered through sterile paper into a 50-cc. sterile, glass-



THE STANDARDIZED SOLUTIONS are selected (right) for a course of desensitizing injections on the basis of intradermal tests with the various allergens.

stoppered cylinder graduate. A small sample is removed with a sterile pipette and a sterility test is made. If the solution is not sterile, it is filtered through a Seitz pad.

The nitrogen content is assayed by the micro-Kjeldahl method suggested by Koch and McMeekin,[28] slightly modified to fit into our procedure here. Take 1 cc. of the sterile extract, accurately measured with a pipette, transfer to a pyrex test tube graduated at 35 and 50 cc. One cubic centimeter of digestion mixture consisting of equal parts of sulfuric acid C. P. and water is added. One or two small glass beads are dropped in to reduce excessive bumping while heating. Heat is applied with a micro burner until the water is driven off as shown by the formation of white fumes of sulfuric acid. A short-stem 35 mm. funnel is placed in the top of the pyrex tube to catch any liquid that may spatter, and heating is resumed for four minutes. One or two drops of 30 % Merck's Superoxol is dropped into the hot mixture, which is usually enough to oxidize the organic matter and effect a clear solution. The mixture is again boiled for one minute to oxidize the Superoxol. If the material is still not clear, another drop or two of Superoxol is added and reheated as before. The cooled solution is diluted to the 35-cc. mark with double distilled water and sufficient Nessler's solution added to bring it to the 50-cc. mark. It is compared at once with a standard solution in a colorimeter.

The working standard solution is made by dissolving 0.4716 Gm. of ammonium sulfate, reagent quality, in sufficient double distilled water to make 1000 cc. Each cubic centimeter thus represents 0.1 mg. nitrogen. One cubic centimeter of this solution is measured with a volumetric pipette and transferred to a test tube, 1 cc. digestion mixture added and enough double distilled water to bring the volume to 35 cc. Nessler's solution, 15 cc., is added to make a total of 50 cc. Gradwohl[29] describes a method of preparing Nessler's which results in a solution unusually free of the trouble experienced with this mixture.

Colorimeter readings are interpreted as follows:

$$\frac{\text{Colorimeter Reading of Standard}}{\text{Colorimeter Reading of Unknown}} \times 0.1 \text{ (Amount of Nitrogen in Standard)}$$

= mg. of Total Nitrogen per cc. of Unknown

Based on this analysis the dilution of the extract is adjusted to the desired concentration of total nitrogen per cubic centimeter. This assayed, sterile, diluted solution can now be transferred to sterile containers and stored in the refrigerator until called for.

Conclusions

It is our belief that many fields in which the pharmacist is qualified to engage have escaped his attention. Allergy is one of them. Allergenic solutions have come into widespread use by clinicians in hospital clinics, institutions and by those in private practice. A method of preparation and a rapid standardization of the solutions are described.

REFERENCES

1. Editors, *J. Allergy*, **1**,1(1929).
2. Vaughan, W. T., *ibid.*, **11**, 584(1940).
3. Jimenez, B., *J. Mich. Med. Soc.*, **33**, 310(1934).
4. Service, W. C., *J. Allergy*, **10**, 174(1939).
5. Bernton, H., *Southern M. J.*, **31**, 1286(1938).
6. Smyth, F. S., and Bain, Katherine, *J. Allergy*, **2**, 316 (1931).
7. Schloss, O. M., *Am J. Dis. Child.*, **3**, 341(1912).
8. Walker, I. C., *J. M. Research*, **35**, 487(1917).
9. Peshkin, M. M., *Am. J. Dis. Child.*, **31**, 763(1926).
10. Cooke, R. A., *Laryngoscope*, **25**, 108(1915).
11. Coca, A. F. *J. Immunol.*, **7**, 163(1922).
12. Cunningham, T. D., and Wolfee, A. M., *J. Allergy*, **4**, 48(1932).
13. Vaughan, W. T., "The Practice of Allergy," The C. V. Mosby Co., St. Louis, 1939, p. 277.
14. Stull, A., Cooke, R. A., and Chobot, R , *J. Biol. Chem.*, **92**, 569(1931).
15. Stull, A., Cooke, R. A., and Chobot, R., *J. Allergy*, **3**, 120(1932).
16. Stull, A., Cooke, R. A., and Chobot, R , *ibid.*, **3**, 341 (1932).
17. Cooke, R. A., and Stull, A., *ibid.*, **4**, 87(1933).
18. Stull, A., Cooke, R. A., and Tennant, Jean, *ibid*, **4**, 455(1933).
19. Unger, L., Moore, Marjorie B., Cromwell, H. W., and Seeber, Constance H., *ibid*, **5**, 115(1934).
20. Abramson, H. A., Sookne, A. M., and Moyer, L. S., *ibid*, **10**, 317(1939).
21. Langner, P. H., and Kern, R. A., *ibid*, **11**, 488(1940).
22. Coca, A. F., *ibid*, **4**, 354(1933).
23. Bowman, Katherine L., *ibid*, **5**, 341(1934).
24. Cohen, V. L., and Goodale, Mary L., *ibid*, **5**, 70(1933).
25. Alles, G. A., Piness, G., and Miller, H., *ibid*, **5**, 5 (1933).
26. Arbesman, C. E., and Eagle, H., *ibid*, **10**, 521(1939).
27. Unger, L., and Moore, Marjorie B., *ibid*, **5**, 561(1934).
28. Koch, F. C., and McMeekin, T. L., *J. Am. Chem. Soc.*, **46**, 2066(1924).
29. Gradwohl, R. B. H., "Clinical Laboratory Methods and Diagnosis," The C. V. Mosby Co., St. Louis, 1935, p. 140.

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FROM THE SECRETARY'S DIARY FOR JULY

—3rd—

AT STAFF meeting today discussed the many things which require our early doing and first among these is the prompt completion of N. F. VIII, which Dr. Powers now has far advanced in galley proof; next, expansion of the *Practical Pharmacy Edition* of the JOURNAL now raring to go but held in leash by lack of paper, all of which disconcerts Editor Sonnedecker and "Adman" O'Malley; and there are, of course, many other plans.

—4th—

Independence Day and with the office formally closed an opportunity to catch up on much routine without the telephone constantly interrupting. With Messrs. Fitzpatrick and Brill of the Office of Surplus Property also working, conferred on our participation in the course for inspectors who will appraise surplus professional and scientific equipment, and they inform us that we are expected to give the over-all lecture on Pharmacy and Drug Supplies. In other words, "four thousand years of pharmacy" in forty minutes.

—5th—

Special preparation for first meeting of the Committee to survey pharmaceutical activities of the U. S. Public Health Service, which will be held tomorrow. Also a chat with Frederick Stearns' Dr. Moore, whose research problems brought him to Washington.

—6th and 7th—

As told on page 238 the Committee to Survey Pharmacy in U.S.P.H.S. met all day and night at the Statler and it is good to have this mental exercise, endeavoring to see what the other fellow sees when we all look at the same charts, hear the same words and have access to the same facts. Always the pedagogues disagree on things pedagogical and the hospital pharmacists on things hospital, but there was eventual meeting of the minds and it did not take long when aided and abetted by Assistant Surgeon-General R. C. Williams, Pharmacists R. D. Kinsey and T. A. Foster and Mary Switzer, the highly competent right hand of Administrator Paul V. McNutt. So this task nears completion and its effects should be far reaching, thanks to the close application and wide experience of California's Daniels, Louisiana's Lauve, Michigan's Francke, Iowa's Zopf and Pennsylvania's Griffith.

—8th—

A part of this Sunday at the office catching up with membership matters and interviewing prospective clerical personnel which seems to get scarcer as government salaries soar and work-weeks recede from the maximum 48 hours. To dinner with Francke and Lauve and a final going over of the hospital pharmacist's problems and they not only know the problems but also the answers.

—9th—

Dean Reif of Pittsburgh, a welcome visitor and guest at luncheon with the staff, and there was talk of research and revised curricula and quality of applicants, all tending to show that pharmacy at "Old Pitt" is in safe and sensible custody.

—11th—

The daily task interspersed with an impromptu luncheon conference with Carson Frailey, which gave an opportunity to discuss surplus drug disposal; also conferred with Dr. Lewis Weed, who heads the Division of Medical Sciences in the National Research Council, on greater A. PH. A. participation in the activities of the Division and this is on the way with service of A. PH. A. members on the Committee on Drugs and Medical Supplies and the Sub-Committee on Pharmacy. Late at work at the office with artificial light attracting many a

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Name_____ **Name**_____

If the applicant is unacquainted with any member of the Association, the officers will aid in securing the necessary recommendations. This application, with the payment of dues for one year, may be sent to any member of the membership committee, the Secretary, or any officer of the Association.

Date_____ **R. P. FISCHELIS, *Secretary*, 2215 Constitution Avenue, Washington 7, D. C.**

strange insect that is silent and hidden throughout the day in our profuse shrubbery.

—12th—

Today came A. L. I. Winne of Richmond, with his Inspector MacIntosh, to review accumulated data on the barbituric acid control problem; also for a review of national legislation for his annual report of the A. PH. A. committee which he heads. The groundwork was laid for coming to grips with the hypnotic drug problem. Later came Harvey Mack and Cy Fleck of the Mack Printing Co. to discuss serious publication and circulation problems and after dinner a long conference with Council Chairman Beal who was in town on mixed business but, as usual, gave the A. PH. A. a most generous share of his time.

—13th—

Early to the office and then to Baltimore by rail to meet Swain, Dunning and Schaefer for several hours of serious talk on A. PH. A. office personnel and finance problems. Back to Washington in time for signing the mail and to dine with Drs. Beal and Powers and Mrs. Powers, who succeeded wonderfully in diverting the conversation from "shop." Later to the Washington Hotel with George Beal for more A. PH. A. business.

—15th—

Off to Chicago on the Manhattan Limited and thankful for a lower berth on a relatively slow train.

—16th—

Arrived in Chicago, two hours behind schedule and the reserved room not to be available until 7 p. m. One marvels at the system which lines people up at the registration desk for an hour to find out there will be no room for the next eight or ten hours and brings them back to wait in line another hour to pick up the room which has been assigned several hours earlier. Perhaps a pharmacist cannot know anything about the hotel business but he *can* wonder. Spent several hours with Pat Costello in the comfortable and good-looking offices of the N. A. B. P.

—17th—

Joined members of the Committee on Therapeutic Trials (see page 239) and representatives of A. D. M. A. and A. P. M. A. at A. M. A. headquarters, by invitation of the Council on Pharmacy and Chemistry, to hear and discuss the proposed procedure for bringing producers of new and valuable drugs and qualified clinicians together and working out a basis for cooperative clinical research. A forward step in establishing the therapeutic worth of the

products of the laboratory and determining the validity of old claims, also establishing new uses for existing drugs. Later in the day to confer with Serles, Doerr and Costello on distributive education plans, how to compile statistics about pharmacists and the proposed surveys of pharmacy and pharmaceutical education. Still later to chat with Secretary Olin West at A. M. A. headquarters and Secretary Bugbee at American Hospital Association headquarters. After dinner a long session with John Dargavel with full discussion of mutual problems and much helpful information interchanged.

—18th—

Early to A. M. A. headquarters to confer with Dr. Morris Fishbein on the control of barbituric acid derivatives and found him well aware of our problems but not impressed with recital of dispensing doctors' derelictions. Also discussed the preparation of a directory of pharmacists and spent some time with Mr. Cargill who has all the answers from long experience in publishing the classic A. M. A. Directory. Then to the U. S. Marine Hospital to inspect the pharmacy and confer with the C. O. on drug problems. From there to the Liberty Limited, which left at 3:10 p.m. for Washington but was detoured to Logansport and thence to Fort Wayne because of a freight wreck between Fort Wayne and Chicago, so reached Washington next day at 12:30 p. m. instead of 9 a. m.

—19th—

Arrived in time for luncheon date with Drs. Hazleton of D. C. and Wilson of Minnesota to discuss Scientific Section problems and then working steadily the rest of the week to catch up with accumulated correspondence of past three days.

—24th—

To Philadelphia to deliver commencement address and receive honorary D.Sc. at 124th Commencement of the Philadelphia College of Pharmacy and Science. Earlier in the day met Porfirio Solarzano of Nicaragua, who presented credentials from the pharmaceutical association of his country and established liaison between his organization and A. PH. A. Thus we implement the good neighbor policy in the sphere of our own professional activity

—25th—

En route to Washington met Petersen and Parker of Heyden Chemical Co. and W.P.B.'s Roy Koch all bound for penicillin conferences with F.D.A. and N.R.C. Shocked to receive telegram announcing

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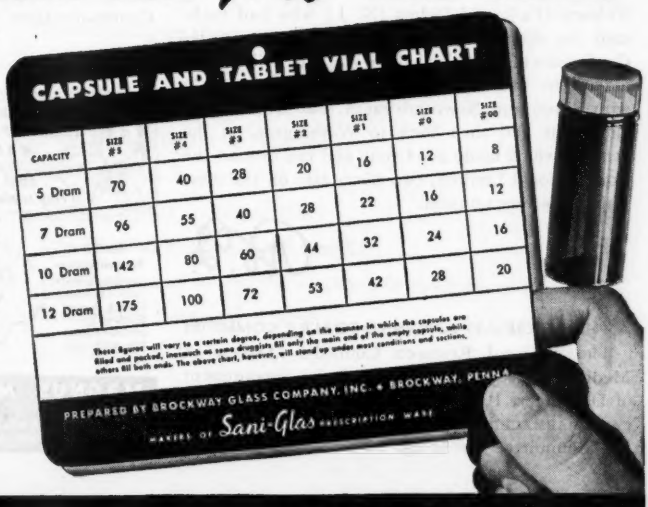
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Leonard Seltzer's death; not only our honorary president but one who brought honor to the profession at large. To lunch with H. A. K. Whitney formerly of Michigan University Hospital at Ann Arbor, now director of pharmaceutical development for Ortho Products. Harvey has lost none of his enthusiasm for better hospital pharmacy and better pharmaceuticals for the sick. Later with pharmacists Kinsey and Foster of U.S.P.H.S. to discuss mutual problems and that night to talk Council business with Chairman Beal, who is in town for various conferences.

—26th—

All morning completing reports and conferring with staff. After lunch to conferences at F.D.A. with E. F. Cook, Rosin, Swain, Beal, Dunbar, Welch, Herwick, Salter and Bliss on penicillin assays and standards. Next a profitable hour and a half with Swain discussing A. PH. A. Finance Committee business and reviewing the status of many a pending problem.

—30th—

This morning to the 65th floor of the Empire State Building in New York to address a group of surplus property inspectors who will be responsible for writing proper specifications for professional and scientific supplies and equipment. We could not help but be thankful that our part in the course did not begin on Saturday when the ill-fated bomber collided with this building. To lunch at the Chemists Club with Secretaries Gesoalde (N. Y.) Rickard (Pa.), and Debus (N. J.) who had gathered to discuss a possible Eastern Secretaries Conference meeting, and there was much discussion of current problems. Later to confer separately with Swain and Newcomb on A. PH. A. problems and plans and then back to Washington on the Senator which made good time and ran around the Congressional Limited, two hours late on the way, which was very unusual.

R.O.W.

A. PH. A. SECRETARY APPOINTED TO N.R.C. COMMITTEE

The National Research Council's Division of Medical Sciences has announced the appointment of Dr. Robert P. Fischelis, secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION, as a member of the Committee on Drugs and Medical Supplies. This Committee has passed on the essentiality of drugs and medical supplies throughout the war.

ARMY STUDIES OUTDOOR USE OF DDT

Extensive investigations to determine the benefits and possible hazards of using DDT on a large scale outdoors have been announced by the Army. The work is particularly timely since small amounts of the new insecticide have just become available for civilian use in this country. In combat zones where the health of the soldier was at stake, it was necessary to use DDT extensively without regard to the possible effects on the balance of nature. Since DDT may kill beneficial insects, as well as disease carriers, the net result of widespread use, in relation to agriculture and wildlife, is still problematic.

BOWERS ELECTED DEAN FOR NEW MEXICO SCHOOL

Dr. Roy A. Bowers, associate professor at the University of Kansas School of Pharmacy, has accepted the deanship of the newly authorized School of Pharmacy at the University of New Mexico. Organization of the school culminates nearly two decades of effort by New Mexico pharmacists to establish such an institution in the state.

—℞—

Lt. Col. Howard B. Nelson, *Pharmacy Corps*, is now assigned to the Office of the Chief Surgeon, European Theater of Operations Headquarters, Communications Zone.

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